2011-03-16 Wednesday Morning Notes

Wednesday, March 16, 2011
7:09 AM

On-call

- Monday/Tuesday: Al
- Wednesday/Thursday: Tony
- Friday: DVM

Stacking and Transfers

- Stacked 26.1mA/hr with an average production of 22.64 pbars/Mp with 8.03 Tp on target.
- Unstacked 477E10 in 55 transfers over 18 sets with an overall efficiency of only 93.9%.
    - Taking out the two sets of transfers from over 35mA, we still only get 94.5 transfer efficiency.
    - Transfer efficiency down 2%. Emittances, orbit, Kicker timing, TBT, fudge factors and energy match all appear to be ok.
    - The drop in efficiency appears to have started around transfer 23607, which is the first transfer after coming out of the shutdown on March 12. We have been down 2% in transfer efficiency since turning back on.
    - Where did our 2% go? MI? RR? DCCT?

Interesting Happenings

- 05:32 pbar permit down on target station dump interlocks.
    - Made up 3-4 inches of water to dump water reservoir tank (~1.75 gallons).
    - Filled with the new remote fill system
    - Leak appears to be increasing slightly (made up 3" yesterday ~1.5 gallons at 8am).
- More ARF1 trips
    - Indication that DRF1-1 has a driver fan issue.
    - Each trip requires 4-5 time-in of filaments.
    - Request 30 minutes of no stacking time to replace the fan….if no natural downtime, would like to get done today
- A:BS309 output has stabilized! There is still an offset in the readback, that we will address on the next naturally occurring access day. There is no rush on this.

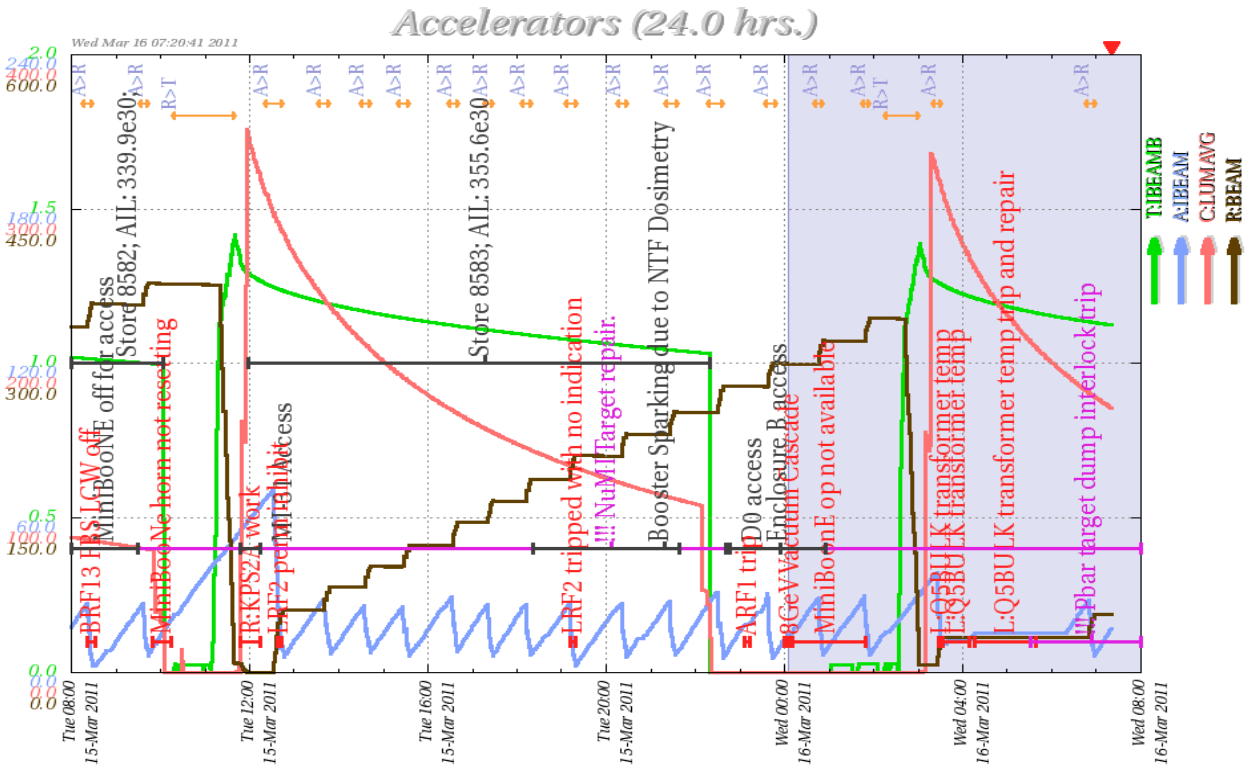
Numbers

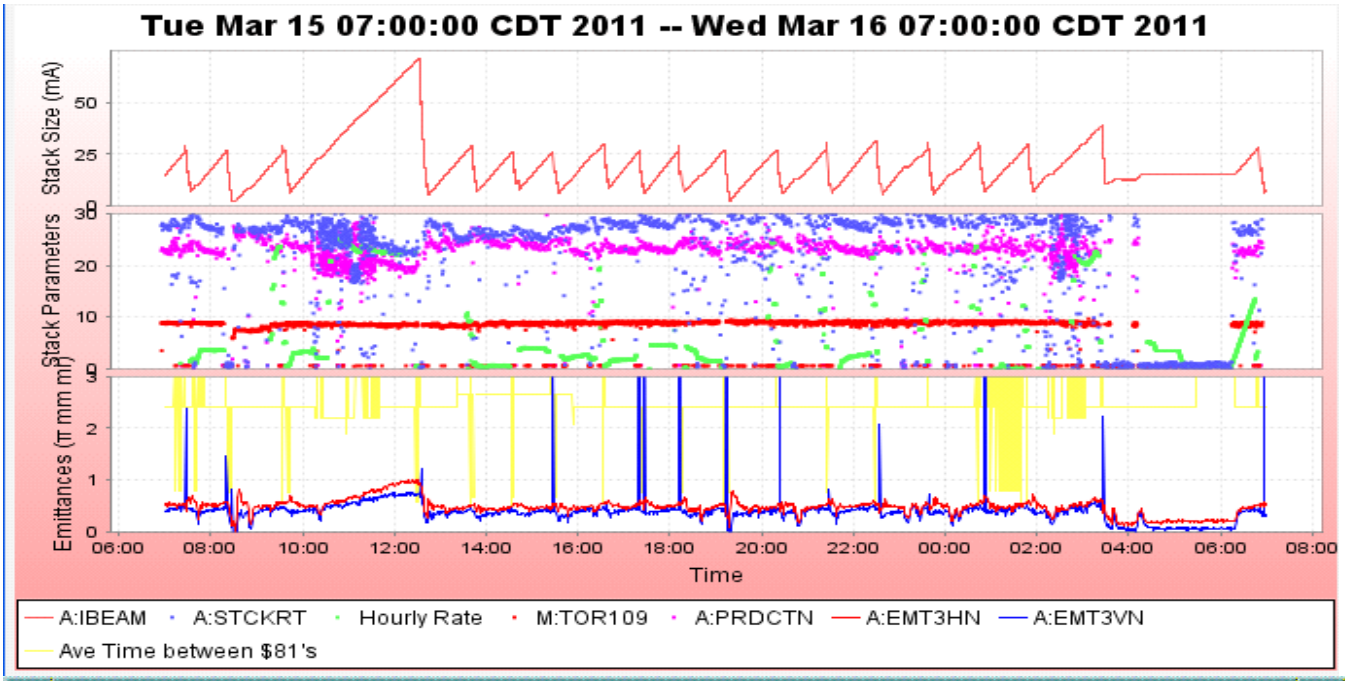
- Stacking
    - Pbars stacked: 500.14 E10
    - Time stacking: 21.42 Hr
    - Average stacking rate: 23.35 E10/Hr
- Uptime
    - Number of pulses while in stacking mode: 31373
    - Number of pulses with beam: 28226
    - Fraction of up pulses was: 89.97%
- The uptime's effect on the stacking numbers
    - Corrected time stacking: 19.27 Hr
    - Possible average stacking rate: 25.96 E10/Hr
    - Could have stacked: 555.90 E10/Hr
- Recycler Transfers
    - Pbars sent to the Recycler: 500.06 E10
    - Number of transfers : 58

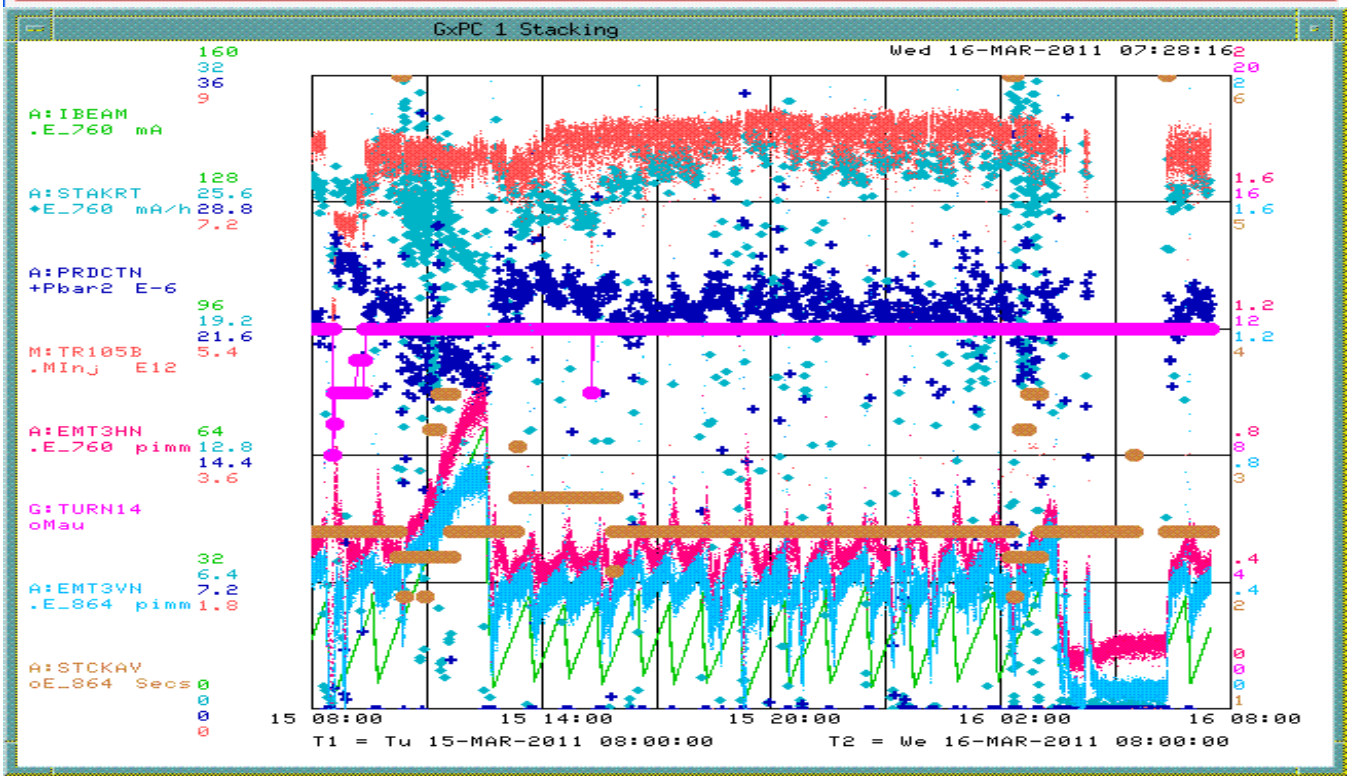
- Number of transfer sets: 18
- Average Number of transfer per set: 3.22
- Time taken to shoot including reverse proton tuneup: 00.20 Hr
- Transfer efficiency: 93.48%

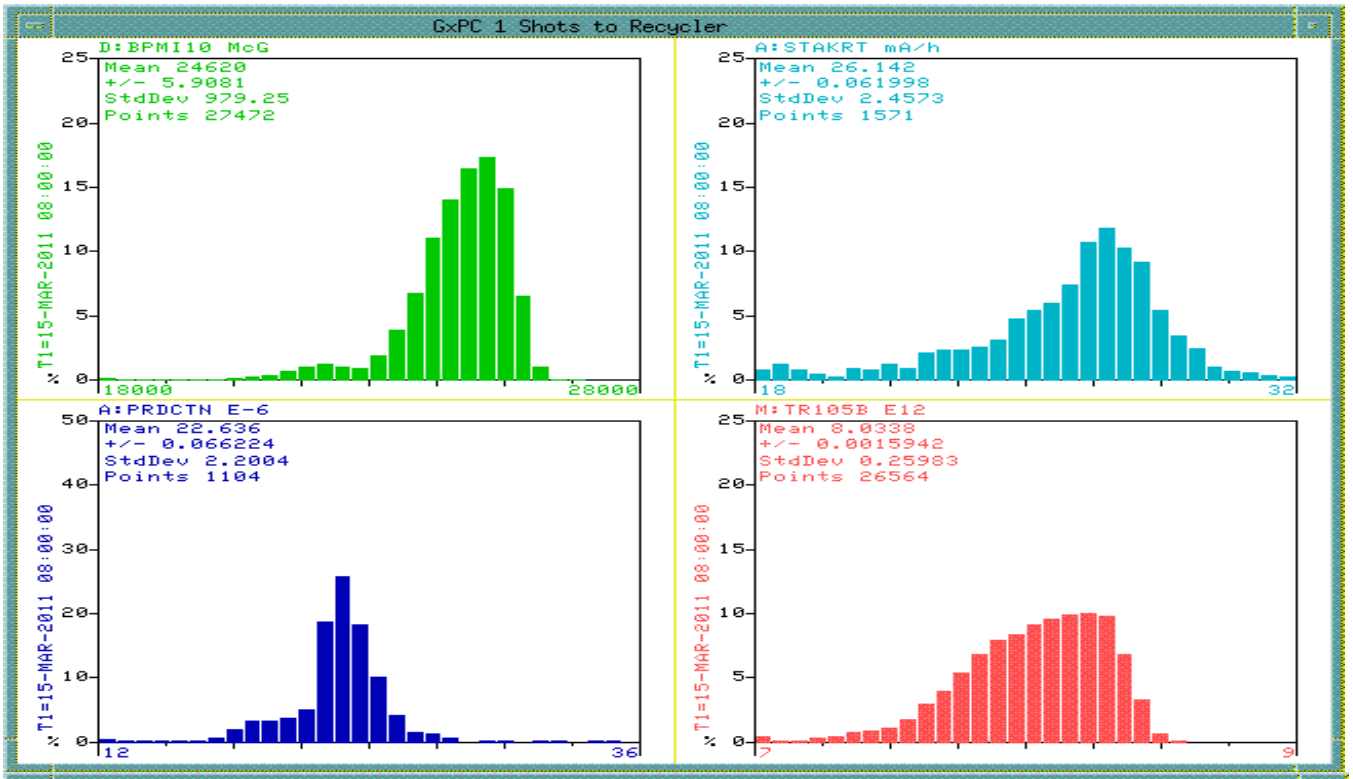
- Other Info
  - Average POT : 7.98 E12
  - Average production: 22.19 pbars/E6 protons

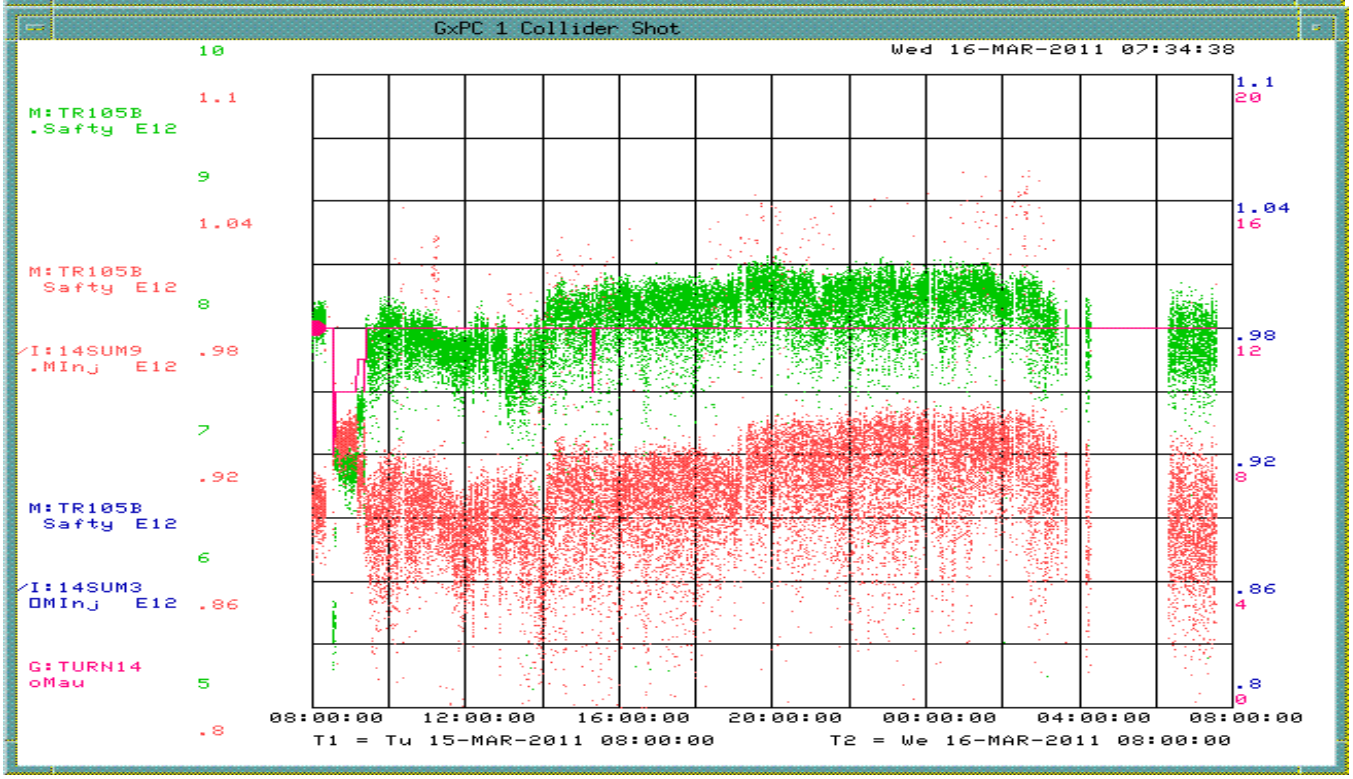
Plots

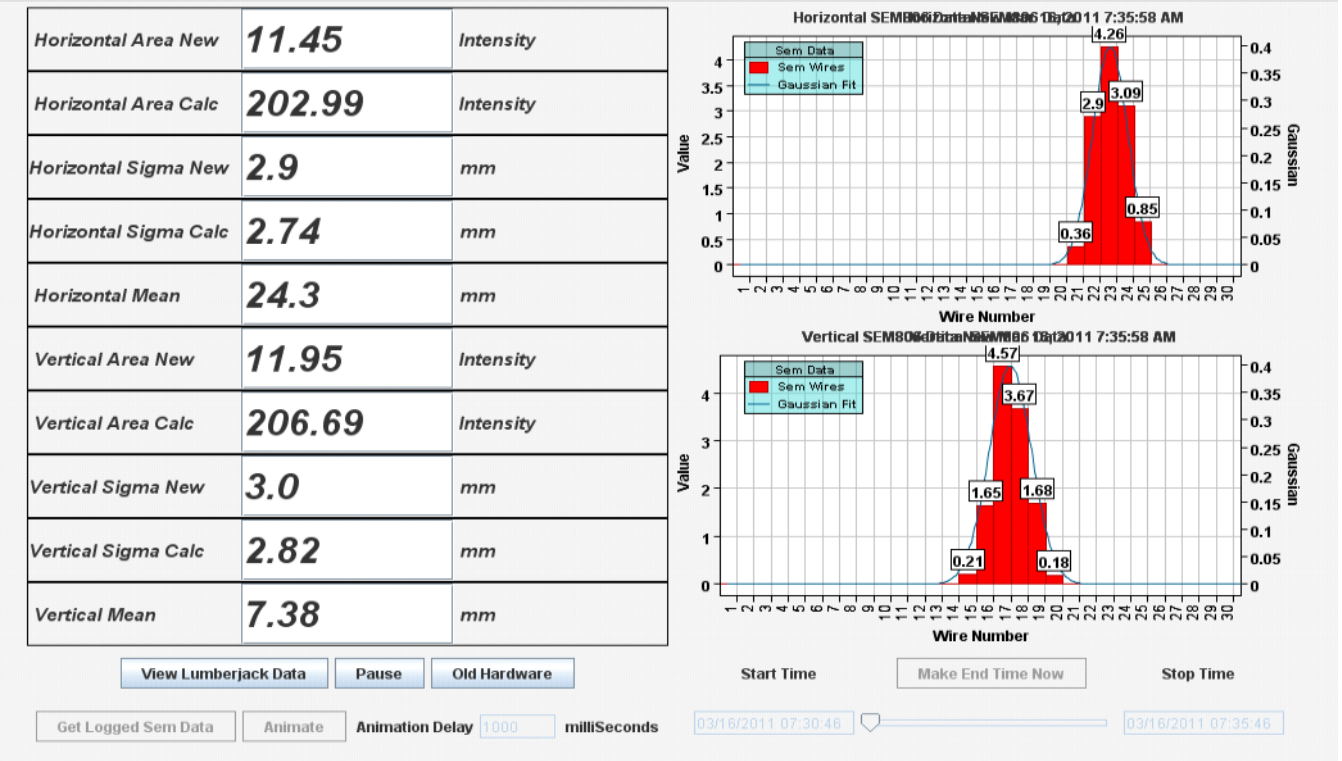


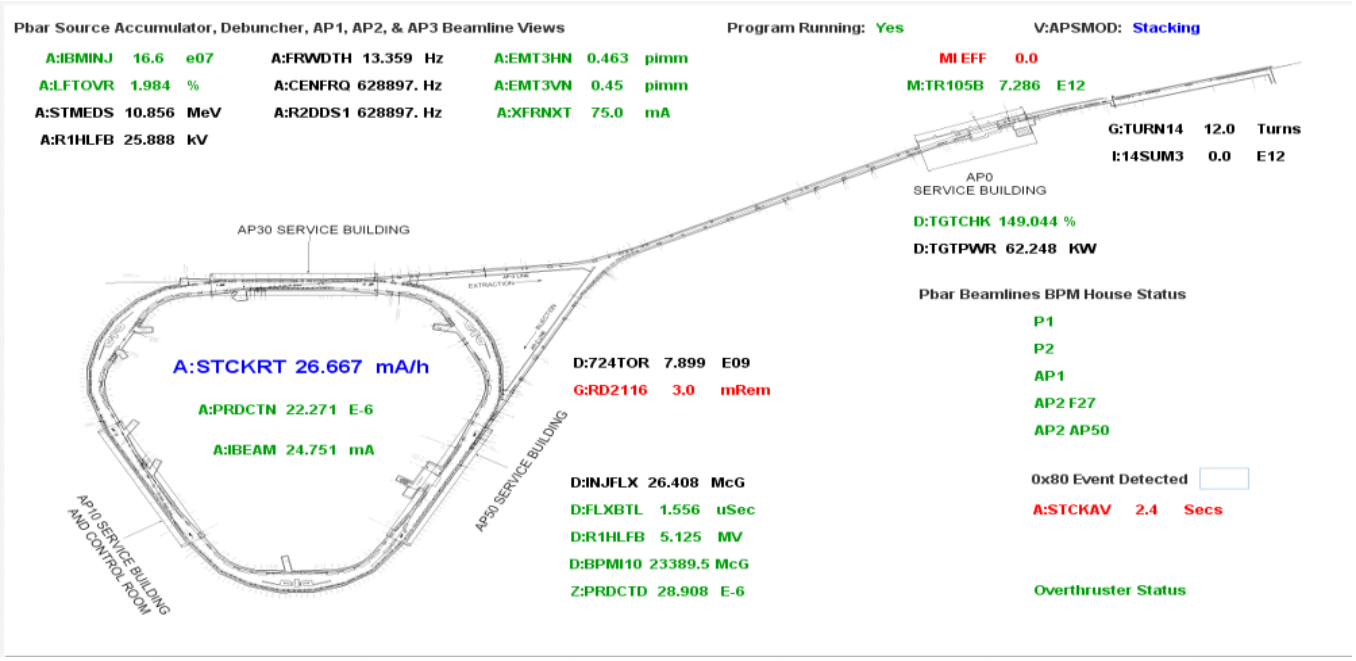

Tue Mar 15 07:00:00 CDT 2011 -- Wed Mar 16 07:00:00 CDT 2011
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's

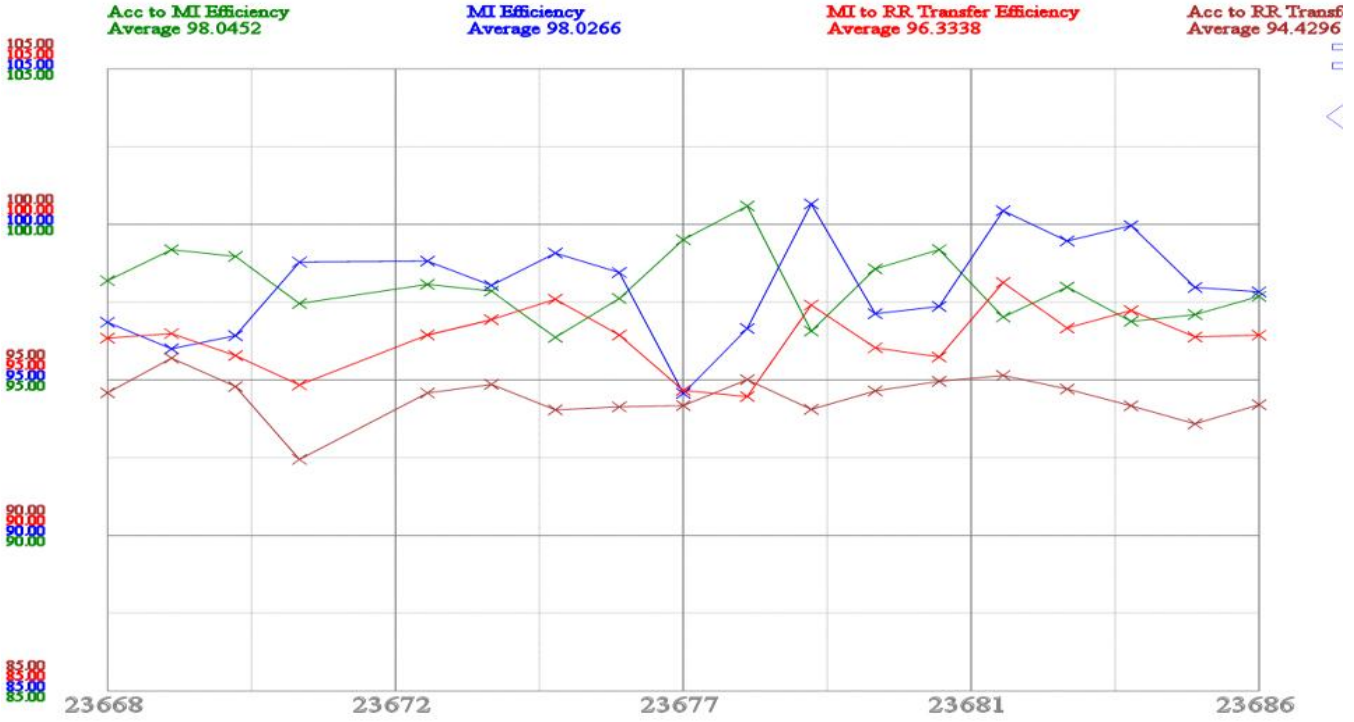

GxPC 1 Stacking
Wed 16-MAR-2011 07:28:16
A:IBEAM
.E_760 mA
A:STAKRT
•E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
oMau
A:EMT3VN
.E_864 pimm
A:STCKAV
oE_864 Secs
15 08:00
15 14:00
15 20:00
16 02:00
16 08:00
T1 = Tu 15-MAR-2011 08:00:00
T2 = We 16-MAR-2011 08:00:00


GxPC 1 Shots to Recycler
D:BPMI10 McG
Mean 24620
+/- 5.9081
StdDev 979.25
Points 27472
T1=15-MAR-2011 08:00:00
18000
28000
A:STAKRT mA/h
Mean 26.142
+/- 0.061998
StdDev 2.4573
Points 1571
T1=15-MAR-2011 08:00:00
18
32
A:PRDCTN E-6
Mean 22.636
+/- 0.066224
StdDev 2.2004
Points 1104
T1=15-MAR-2011 08:00:00
12
36
M:TR105B E12
Mean 8.0338
+/- 0.0015942
StdDev 0.25983
Points 26564
T1=15-MAR-2011 08:00:00
7
9

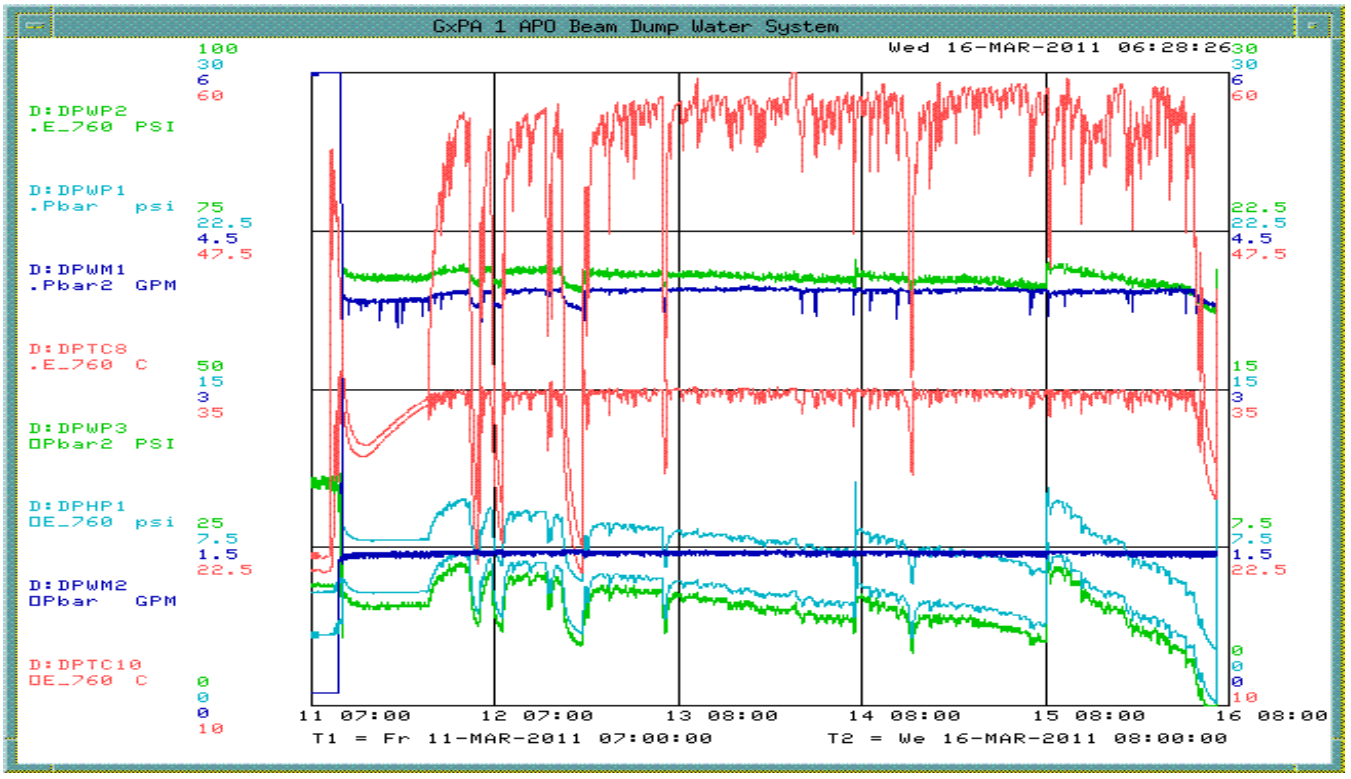

GxPC 1 Collider Shot
Wed 16-MAR-2011 07:34:38
M:TR105B
.Safty E12
M:TR105B
Safty E12
I:14SUM9
.MInj E12
M:TR105B
Safty E12
I:14SUM3
MInj E12
G:TURN14
oMau
08:00:00
12:00:00
16:00:00
20:00:00
00:00:00
04:00:00
08:00:00
T1 = Tu 15-MAR-2011 08:00:00
T2 = We 16-MAR-2011 08:00:00


Horizontal Area New 11.45 Intensity
Horizontal Area Calc 202.99 Intensity
Horizontal Sigma New 2.9 mm
Horizontal Sigma Calc 2.74 mm
Horizontal Mean 24.3 mm
Vertical Area New 11.95 Intensity
Vertical Area Calc 206.69 Intensity
Vertical Sigma New 3.0 mm
Vertical Sigma Calc 2.82 mm
Vertical Mean 7.38 mm
Horizontal SEM 03/16/2011 7:35:58 AM
Sem Data
Sem Wires
Gaussian Fit
4.26
3.09
2.9
0.85
0.36
Value
Gaussian
Wire Number
Vertical SEM 03/16/2011 7:35:58 AM
4.57
3.67
1.65
1.68
0.21
0.18
View Lumberjack Data
Pause
Old Hardware
Start Time
Make End Time Now
Stop Time
Get Logged Sem Data
Animate
Animation Delay 1000 milliSeconds
03/16/2011 07:30:46
03/16/2011 07:35:46


Pbar Source Accumulator, Debuncher, AP1, AP2, & AP3 Beamline Views
Program Running: Yes
V:APSMOD: Stacking
A:IBMINJ 16.6 e07
A:LFTOVR 1.984 %
A:STMEDS 10.856 MeV
A:R1HLFB 25.888 kV
A:FRWDTH 13.359 Hz
A:CENFRQ 628897. Hz
A:R2DDS1 628897. Hz
A:EMT3HN 0.463 pimm
A:EMT3VN 0.45 pimm
A:XFRNXT 75.0 mA
MI EFF 0.0
M:TR105B 7.286 E12
G:TURN14 12.0 Turns
I:14SUM3 0.0 E12
AP0 SERVICE BUILDING
AP30 SERVICE BUILDING
D:TGTCHK 149.044 %
D:TGTPWR 62.248 KW
A:STCKRT 26.667 mA/h
A:PRDCTN 22.271 E-6
A:IBEAM 24.751 mA
D:724TOR 7.899 E09
G:RD2116 3.0 mRem
Pbar Beamlines BPM House Status
P1
P2
AP1
AP2 F27
AP2 AP50
AP50 SERVICE BUILDING
AP10 SERVICE BUILDING AND CONTROL ROOM
D:INJFLX 26.408 McG
D:FLXBTL 1.556 uSec
D:R1HLFB 5.125 MV
D:BPMI10 23389.5 McG
Z:PRDCTD 28.908 E-6
0x80 Event Detected
A:STCKAV 2.4 Secs
Overthruster Status

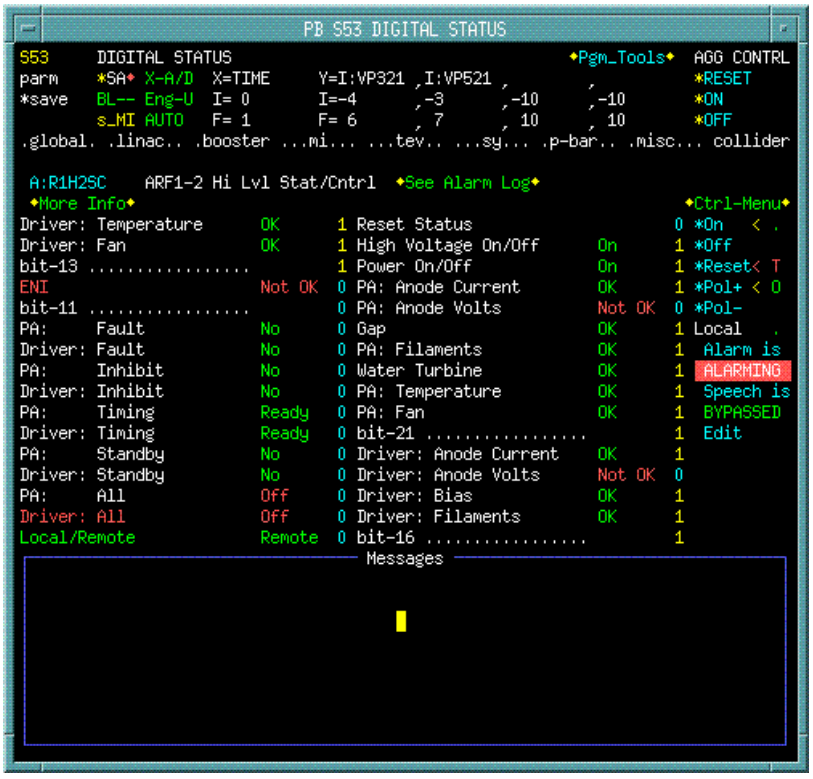


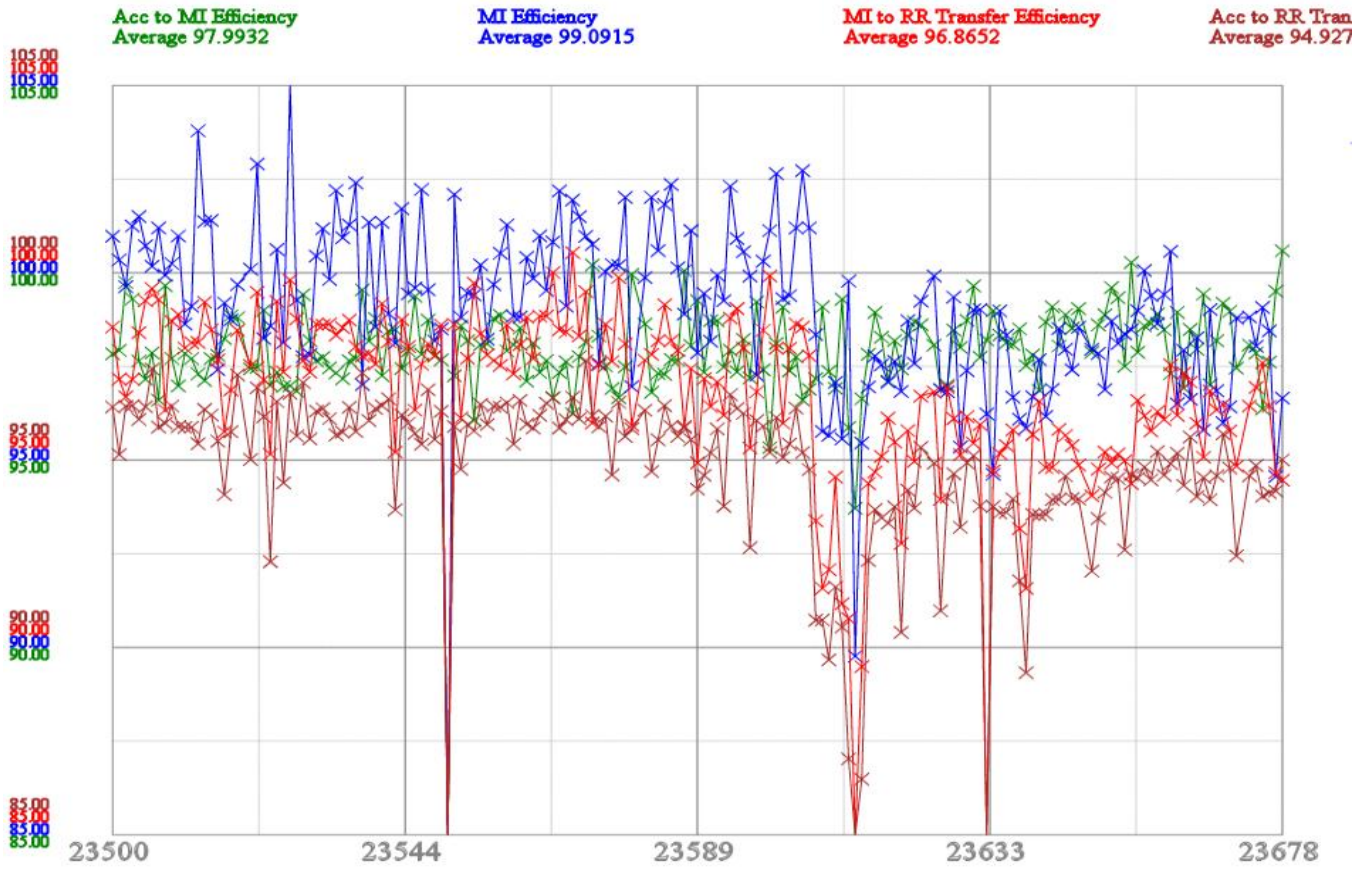
Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:IBEAMB sampled on $94 (A:BEAM9), E10	Unstacked (mA)	Column 23 Number_22_R:BEAMS (R:BEAME0[0]) pre xfer E10	Column 24 Number_23_R:BEAM (R:BEAME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Acc to MI * Acc to MI2 Efficiency	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance
	Totals =>				477.49			448.57	93.94%	98.01%	95.97%	94.06%	55	18	4.7947	3.6226	1.9258
	Daily Average =>				477.49			448.57					55	18			
23686	Wednesday, March 16, 2011	6:50	28.39	6.36	24.36	33.72	56.45	22.91	94.03%	97.85%	95.74%	93.68%	3	1	4.69	3.51	1.957
23685	Wednesday, March 16, 2011	3:26	39.16	10.94	28.30	7.68	34.05	26.48	93.60%	97.13%	95.01%	92.28%	2	1	4.988	4.054	1.818
23684	Wednesday, March 16, 2011	1:48	29.86	6.68	25.20	321.46	344.70	23.67	93.94%	97.38%	96.59%	94.07%	3	1	5.066	3.648	1.935
23683	Wednesday, March 16, 2011	0:46	29.31	6.69	24.71	299.50	322.52	23.37	94.58%	98.23%	97.30%	95.58%	3	1	5.043	3.939	1.957
23682	Tuesday, March 15, 2011	23:38	27.57	5.24	24.35	277.63	300.42	23.15	95.08%	97.91%	97.85%	95.81%	3	1	4.563	3.509	1.912
23681	Tuesday, March 15, 2011	22:31	31.67	5.58	27.94	252.49	278.58	26.51	94.87%	98.94%	96.60%	95.58%	3	1	4.808	3.699	1.899
23680	Tuesday, March 15, 2011	21:25	27.85	6.36	23.63	231.25	253.28	22.35	94.57%	98.78%	95.61%	94.44%	3	1	5.041	3.625	1.946
23679	Tuesday, March 15, 2011	20:20	27.09	5.85	23.29	210.30	231.84	21.89	93.99%	96.90%	96.48%	93.49%	3	1	4.848	3.933	1.941
23678	Tuesday, March 15, 2011	19:11	27.08	2.24	25.06	187.29	210.78	23.73	94.71%	99.96%	97.49%	97.45%	3	1	3.294	2.129	1.831
23677	Tuesday, March 15, 2011	18:12	26.76	6.50	22.53	166.55	187.64	21.30	94.53%	99.11%	94.36%	93.52%	3	1	4.883	3.806	1.983
23676	Tuesday, March 15, 2011	17:21	26.98	6.13	23.01	145.50	166.84	21.62	93.96%	97.88%	95.75%	93.73%	3	1	5.076	3.661	1.939
23675	Tuesday, March 15, 2011	16:33	30.06	8.13	24.11	123.40	145.76	22.62	93.81%	96.63%	95.06%	91.85%	3	1	4.937	4.013	1.947
23674	Tuesday, March 15, 2011	15:27	25.97	5.99	22.07	102.87	123.64	20.91	94.78%	97.95%	96.38%	94.41%	3	1	4.298	3.399	1.958
23673	Tuesday, March 15, 2011	14:35	26.31	7.62	21.35	83.02	103.02	20.15	94.37%	97.65%	95.90%	93.65%	3	1	4.586	3.699	2.002
23671	Tuesday, March 15, 2011	12:32	71.37	5.39	68.03	0.42	60.92	61.87	90.95%	97.21%	95.64%	92.97%	5	1	5.899	4.078	1.843
23670	Tuesday, March 15, 2011	9:36	26.98	6.37	22.98	357.09	378.46	21.82	94.96%	98.77%	95.68%	94.50%	3	1	5.295	3.99	1.949
23669	Tuesday, March 15, 2011	8:22	26.97	2.45	24.53	335.86	358.78	23.40	95.38%	99.03%	95.12%	94.20%	3	1	3.536	2.362	1.869
23668	Tuesday, March 15, 2011	7:27	26.43	6.96	22.06	316.61	337.00	20.82	94.40%	98.44%	95.22%	93.73%	3	1	5.453	4.152	1.979


GxPA 1 APO Beam Dump Water System
Wed 16-MAR-2011 06:28:26
D:DPWP2
.E_760 PSI
D:DPWP1
.Pbar psi
D:DPWM1
.Pbar2 GPM
D:DPTC8
.E_760 C
D:DPWP3
DPbar2 PSI
D:DPHP1
DE_760 psi
D:DPWM2
DPbar GPM
D:DPTC10
DE_760 C
11 07:00
12 07:00
13 08:00
14 08:00
15 08:00
16 08:00
T1 = Fr 11-MAR-2011 07:00:00
T2 = We 16-MAR-2011 08:00:00


PB S53 DIGITAL STATUS
S53 DIGITAL STATUS
♦Pgm_Tools♦
AGG CONTRL
*RESET
*ON
*OFF
.global. .linac.. .booster ...mi... ...tev.. ...sy... .p-bar.. .misc... collider
A:R1HLSC ARF1 Hi Lvl Stat/Cntrl
♦See Alarm Log♦
♦More Info♦
♦Ctrl-Menu♦
ARF1-2 PA Fault No
ARF1-2 Driver Fault No
ARF1-2 PA Timing Ready
ARF1-2 Driver Timing Ready
ARF1-2 PA Standby No
ARF1-2 Driver Standby No
ARF1-2 All Off
ARF1-2 Local/Remote Remote
ARF1-1 PA Fault Yes
ARF1-1 Driver Fault Yes
ARF1-1 PA Timing Ready
ARF1-1 Driver Timing Ready
ARF1-1 PA Standby No
ARF1-1 Driver Standby No
ARF1-1 All Off
ARF1-1 Local/Remote Remote
*On
*Off
*Reset
Local
Alarm is
ALARMING
Speech is
BYPASSED
Edit
Messages


PB S53 DIGITAL STATUS
S53 DIGITAL STATUS
♦Pgm_Tools♦
AGG CONTRL
parm *SA♦ X-A/D X=TIME Y=I:VP321 ,I:VP521 , , *RESET
*save BL-- Eng-U I= 0 I=-4 ,-3 ,-10 ,-10 *ON
s_MI AUTO F= 1 F= 6 , 7 , 10 , 10 *OFF
.global. .linac.. .booster ...mi... ...tev.. ...sy... .p-bar.. .misc... collider
A:R1HLSC ARF1 Hi Lvl Stat/Cntrl ♦See Alarm Log♦
♦More Info♦
♦Ctrl-Menu♦
ARF1-2 PA Fault No 0 0 *On
ARF1-2 Driver Fault No 0 0 *Off < *
ARF1-2 PA Timing Ready 0 0 *Reset< T
ARF1-2 Driver Timing Ready 0 0 .....< 0
ARF1-2 PA Standby No 0 0 .....
ARF1-2 Driver Standby No 0 0 Local .
ARF1-2 All Off 0 0 Alarm is
ARF1-2 Local/Remote Remote 0 0 ALARMING
ARF1-1 PA Fault Yes 1 0 Speech is
ARF1-1 Driver Fault Yes 1 0 BYPASSED
ARF1-1 PA Timing Ready 0 0 Edit
ARF1-1 Driver Timing Ready 0 0
ARF1-1 PA Standby No 0 0
ARF1-1 Driver Standby No 0 0
ARF1-1 All Off 0 0
ARF1-1 Local/Remote Remote 0 0
Messages
PB S53 DIGITAL STATUS
S53 DIGITAL STATUS
♦Pgm_Tools♦
AGG CONTRL
parm *SA♦ X-A/D X=TIME Y=I:VP321 ,I:VP521 , , *RESET
*save BL-- Eng-U I= 0 I=-4 ,-3 ,-10 ,-10 *ON
s_MI AUTO F= 1 F= 6 , 7 , 10 , 10 *OFF
.global. .linac.. .booster ...mi... ...tev.. ...sy... .p-bar.. .misc... collider
A:R1H1SC ARF1-1 Hi Lvl Stat/Cntrl ♦See Alarm Log♦
♦More Info♦
♦Ctrl-Menu♦
Driver: Temperature OK 1 Reset Status 0 *On < .
Driver: Fan Not OK 0 High Voltage On/Off On 1 *Off
bit-13 ..... 1 Power On/Off On 1 *Reset< T
ENI Not OK 0 PA: Anode Current not OK 0 *Pol+ < 0
bit-11 ..... 0 PA: Anode Volts Not OK 0 *Pol-
PA: Fault Yes 1 Gap OK 1 Local .
Driver: Fault Yes 1 PA: Filaments Not OK 0 Alarm is
PA: Inhibit No 0 Water Turbine OK 1 ALARMING
Driver: Inhibit Yes 1 PA: Temperature OK 1 Speech is
PA: Timing Ready 0 PA: Fan OK 1 BYPASSED
Driver: Timing Ready 0 bit-21 ..... 1 Edit
PA: Standby No 0 Driver: Anode Current not OK 0
Driver: Standby No 0 Driver: Anode Volts OK 1
PA: All Off 0 Driver: Bias OK 1
Driver: All Off 0 Driver: Filaments OK 1
Local/Remote Remote 0 bit-16 1
Messages


PB S53 DIGITAL STATUS
S53 DIGITAL STATUS
Pgm_Tools
AGG CONTRL
parm *SA* X-A/D X=TIME Y=I:VP321 ,I:VP521 ,
*RESET
*save BL-- Eng-U I= 0 I=-4 ,-3 ,-10 ,-10
*ON
s_MI AUTO F= 1 F= 6 , 7 , 10 , 10
*OFF
.global. .linac.. .booster ...mi... ...tev.. ...sy... .p-bar.. .misc... collider
A:R1H2SC ARF1-2 Hi Lvl Stat/Cntrl
See Alarm Log
More Info
Ctrl-Menu
Driver: Temperature OK 1 Reset Status 0 *On < .
Driver: Fan OK 1 High Voltage On/Off On 1 *Off
bit-13 ..... 1 Power On/Off On 1 *Reset< T
ENI Not OK 0 PA: Anode Current OK 1 *Pol+ < 0
bit-11 ..... 0 PA: Anode Volts Not OK 0 *Pol-
PA: Fault No 0 Gap OK 1 Local .
Driver: Fault No 0 PA: Filaments OK 1 Alarm is
PA: Inhibit No 0 Water Turbine OK 1 ALARMING
Driver: Inhibit No 0 PA: Temperature OK 1 Speech is
PA: Timing Ready 0 PA: Fan OK 1 BYPASSED
Driver: Timing Ready 0 bit-21 ..... 1 Edit
PA: Standby No 0 Driver: Anode Current OK 1
Driver: Standby No 0 Driver: Anode Volts Not OK 0
PA: All Off 0 Driver: Bias OK 1
Driver: All Off 0 Driver: Filaments OK 1
Local/Remote Remote 0 bit-16 1
Messages


Acc to MI Efficiency
Average 97.9932
MI Efficiency
Average 99.0915
MI to RR Transfer Efficiency
Average 96.8652
Acc to RR Tran
Average 94.927
105.00
100.00
95.00
90.00
85.00
23500
23544
23589
23633
23678